

From: [Nan S. Walden](#)
To: [Blumenfeld, Jared](#)
Cc: [Gaudario, Abigail](#); [Nora Rodriguez](#)
Subject: Meeting with Administrator Blumenfeld week of Feb 1st
Date: Thursday, January 28, 2016 11:39:42 AM

Dear Jared:

I will be in the Bay Area from Arizona next week, and would greatly appreciate a few minutes of your time to update you on the Rosemont Mine situation. Specifically I would like to discuss with you the status of the Clean Water Act sec. 404 permit, the revision of the Biological Opinion regarding a number of endangered or threatened species, and potential mitigation issues. One half hour would be ideal, but I will take whatever you can spare. Alternatively, perhaps we could at least schedule a phone conversation. Monday anytime, or Tuesday morning before 12 noon would be best for me. Later in the week is also a possibility—I have a commitment Wed afternoon in Santa Barbara.

Thank you for your consideration. Abigail can email me and my assistant Nora, or call Nora during business hours at 520 [REDACTED] [REDACTED] or my cell is (b) (6) [REDACTED] anytime.

Best Regards,
Nan

Nan Stockholm Walden, J.D.
Vice President and Counsel
Farmers Investment Co./Green Valley Pecan Co.

(b) (6) [REDACTED]

From: [Johnson, Kathleen](#)
To: [Greczmiel, Horst](#)
Cc: [Brush, Jason](#); [Woo, Nancy](#); [Goforth, Kathleen](#)
Subject: RE: Cancelled Rosemont May 8 Call
Date: Thursday, May 07, 2015 8:40:00 AM

Thanks Horst,

Sadly, Jane retired at the end of April! A big loss for EPA. Jared is currently recruiting for her replacement. In the meantime, Nancy Woo, copied here, is our Acting Water Division Director. I will be out on Friday the 15th and will miss the next call, but we will have others on the call to represent the region.

Hope all is well with you.

Kathleen H. Johnson
Director, Enforcement Division
U.S. EPA - Region 9
75 Hawthorne Street ENF-1
San Francisco, CA 94015
415/972-3873
johnson.kathleen@epa.gov

From: Greczmiel, Horst [mailto:

Sent: Thursday, May 07, 2015 6:30 AM

To: 



















Horst Greczmiel

Associate Director for NEPA Oversight
Council on Environmental Quality

(b) (6)



Please consider the environment before printing this e-mail

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Rosemont Copper Mine

September 2015

Overview

Rosemont Mine is a new open-pit copper and molybdenum mine proposed for construction on approximately 3,655 acres of National Forest System land and 1,200 acres of private land southeast of Tucson. The mineral deposit could reportedly produce up to 10% of the U.S. annual production of copper and create approximately 450 jobs for 25 years. The project, as proposed, would also result in the significant degradation of the Cienega Creek Watershed, which contains regionally rare, largely intact mosaics of the highest quality stream and wetland ecosystems in Arizona.

Within the Cienega Creek watershed, the project would directly fill 40.4 acres of waters (covering 18 stream miles). Secondary impacts include 28.4 acres due to the diversion of flow from downstream waters and loss of perennial springs (including associated waters of the US) due to groundwater drawdown.

Background

Over the past 6 years, EPA has worked with federal, state and local agencies to evaluate the impacts of the proposed mine and its compliance with environmental regulations. The US Forest Service (FS) is the federal lead and the Corps of Engineers is a cooperating agency seeking to adopt the EIS.

On 2/21/2012 EPA rated the Rosemont Copper Mine Project Draft EIS as “EU-3” (Environmentally Unsatisfactory - Inadequate). Presently, EPA continues to work with the FS and partner agencies on the “environmentally unsatisfactory” elements of the project under the context of trying to avoid a potential referral of the action to CEQ. The deadline for referral to CEQ has been temporarily postponed, awaiting the outcome of these aforementioned interagency meetings.

On 2/13/2012, pursuant to the CWA 404(q) Memorandum of Agreement between EPA and the Corps, EPA notified the Corps the proposed project will have substantial and unacceptable impacts to aquatic resources of national importance.

Key issues of concern:

As described in the Final EIS, the project will:

- Fragment a vast, intact, natural landscape that contains hundreds of streams, springs and wetlands;
- Create a half-mile deep pit that will intercept the regional aquifer, requiring groundwater pumping that will dewater perennial springs and degrade the Cienega Creek watershed (including the Las Cienegas National Conservation Area and beyond);
- Adversely affect ten federally listed threatened or endangered species, including the jaguar;
- Reduce water quality in state-designated “Outstanding National Resource Waters” (CWA §303 “Tier 3”).

- Destroy an area considered sacred to the Tohono O'odham Nation; including the disturbance of over 100 prehistoric and historic cultural sights, over one third of which are known to contain human burials;
- Exacerbate regional haze and impacts to a number of Class 1 areas, essentially negating costly retrofits that EPA recently mandated for area power generating facilities.

Status of 404 CWA:

- (b) (5) Deliberative [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Status of NEPA:

- (b) (5) Deliberative [REDACTED]
- [REDACTED]

Contact

Wetland Section: Elizabeth Goldmann, 415-972-3398 and Robert Leidy, 415-972-3463
Environmental Review Section: Carter Jessop, 415-972-3815

From: [Goforth, Kathleen](#)
To: [Greczmiel, Horst](#)
Subject: Re: Cancelled Rosemont May 8 Call
Date: Thursday, May 07, 2015 9:01:37 AM

Horst -

Will you send a new invitation for the calls? It appears that the old one was set to expire with tomorrow's now-cancelled call; no future calls appear on my calendar. Will the call-in number be the same on the 15th?

Thanks -

-Kathy

Sent from my iPhone

On May 7, 2015, at 6:30 AM, Greczmiel, Horst <Horst_Greczmiel@ceq.eop.gov> wrote:

We won't hold a call this Friday and will reconvene on the 15th.

Please let me know if others need to be added – I get bounce backs from

Diamond.Jane@epa.gov

Thank you, Horst

Horst Greczmiel
Associate Director for NEPA Oversight
Council on Environmental Quality
202-395-0827
HGreczmiel@ceq.eop.gov



Please consider the environment before printing this e-mail

From: [Johnson, Kathleen](#)
To: cjoyner@fs.fed.us; steve_spangle@fws.gov
Cc: [Brush, Jason](#); [Kathleen Goforth](#); [Jessop, Carter](#)
Subject: Rosemont BO
Date: Tuesday, October 06, 2015 8:55:00 AM

Hello Cal and Steve. As we discussed with Horst two Fridays back, a lot of agency actions are nearing decision points. I'd like to keep sharing information to help keep our products consistent, and minimize (to the extent we can) the unintended loop of one agency action re-opening another that was thought to be "complete."

EPA has both CEQ referral and 404 elevation to consider, and the findings of the BO will be important to both. When you share the draft BO with the Corps (currently scheduled 10/22), would you both be agreeable to including EPA? We would appreciate the early look. Thanks for your consideration.

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From: [Jessop, Carter](#)
To: [Blaine, Marjorie E SPL](#)
Subject: Rosemont Gant Chart Files
Date: Monday, July 13, 2015 2:16:00 PM

Hi Marjorie,

Thank you for the Gant Chart that you provided illustrating the process/timeline for the Corps, USFS, and FWS moving forward. As discussed on Friday's call, EPA would like to look into adding the steps involved in a potential Referral under NEPA. I wonder if you created the Gant Chart using Microsoft Project? If so, that would be very convenient, because I have Project installed and I think it might be easier for us to explore the best way to add in the Referral timeline if I can make electronic changes to the chart (rather than pencil/pen ones). Would you be willing/able to send me the original Microsoft Project files? I expect that any changes would be routed back through the Corps. Access to the original file would simply provide ease of manipulation.

Thank you.

-Carter

Carter W. Jessop
U.S. EPA, Region 9
Environmental Review Section (ENF-4-2)
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San Francisco, CA 94105
(415) 972-3815
jessop.carter@epa.gov

From: [Goforth, Kathleen](#)
To: [Horst Greczmiel](#)
Cc: [Jessop, Carter](#)
Subject: Rosemont Timeline edit
Date: Friday, October 23, 2015 5:54:47 PM
Attachments: [Rosemont Timeline Info Paper 9 Oct 2015 EPAedit kmg.docx](#)

Hi, Horst –

As requested, we've edited the timeline to include the date of our comments on the Forest Service's Draft EIS. See attached.

Have a great weekend!

-Kathy

Kathleen Martyn Goforth, Manager
Environmental Review Section (ENF-4-2)
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415-972-3521

ROSEMONT COPPER MINE – TIMELINES

| | |
|--------------------------|--|
| March 2006 | The Coronado National Forest (CNF) began government-to-government consultation with 12 tribes after receiving Rosemont Copper’s intent to file a preliminary mine plan of operations (MPO) |
| July 2007 | Rosemont Copper submitted a preliminary MPO to the CNF requesting approval to construct, operate, reclaim, and close an open pit copper mine on National Forest System and adjacent State and private lands |
| February 2008 | Rosemont Copper submitted a supplemental preliminary MPO to the CNF |
| March 2008 | The CNF sent a letter to tribes indicating that the Project was continuing |
| March 13, 2008 | USFS Notice of Intent (NOI) to Prepare an EIS (73 FR 13527) requested scoping comments |
| April 29, 2008 | USFS Corrected NOI (73 FR 23181) extended the scoping comment period to mid-July 2008 (120 days total) and announced 3 public hearings |
| November 2010 | The Corps issued a Preliminary Jurisdictional Determination that 101.6 acres of potentially jurisdictional waters of the United States (WUS) are in the proposed project area |
| October 19, 2011 | USFS Notice of Availability of Draft EIS (76 FR 64893) |
| January 5, 2012 | EPA Region IX reaffirmed the 2009 designation of the Davidson Canyon and Cienega Creek watershed as “aquatic resources of national importance” and identified the Rosemont Section 404 permit action as a candidate for EPA and Corps Headquarters review under the 1992 EPA-Department of the Army MOA |
| <u>February 21, 2012</u> | <u>EPA Region IX rated the USFS Rosemont Copper Mine Project Draft EIS as Environmentally Unacceptable and Inadequate (“EU-3”) on the basis of anticipated impacts to air quality and water resources and a lack of adequate information pertaining to mine design, geochemistry, reclamation, water resources, and air quality.</u> |
| October 2013 | The CNF completed NHPA Section 106 consultation with the Arizona SHPO, resulting in a finding that the Project would result in adverse effects on historic properties |
| October 30, 2013 | USFWS issued Final Biological and Conference Opinion (BO) |

| | |
|--------------------|--|
| December 13, 2013 | USFS issued final EIS (FEIS) and draft Record of Decision (ROD) and Finding of Nonsignificant Forest Plan Amendment for the Rosemont Copper Project NEPA referral period was extended to a date TBD |
| December 31, 2013 | Newspaper notice opened a 45-day Objection process until February 14, 2014 |
| January 3, 2014 | USFS Notice of Availability of Final EIS (79 FR 392) |
| January 29, 2014 | CEQ and EPA HQ Site Visit |
| May 23, 2014 | USFS letter to USFWS conveying intent to reinstate formal consultation based on an ocelot in the action area, supplement the biological assessment, and request conference on the effects on the northern Mexican gartersnake and yellow-billed cuckoo and certain proposed critical habitat |
| June 13, 2014 | Regional Forester issued letter responding to 101 eligible Objection letters |
| September 26, 2014 | Corps provided USFS with revised Habitat Mitigation and Monitoring Plan (HMMP) |
| May 22, 2015 | USFS completed Final Supplemental Information Report (revised June 2015) and Supplemental Biological Assessment |
| May 26, 2015 | USFS reinstated formal ESA Section 7 consultation |

Projected Notional Timeline (based on August 20, 2015 Gantt chart)



Scenario I (based on April 2015 Decision Flow Chart)

LA District Commander recommends issuing Section 404 permit

(b) (5)

Deliberative

Scenario II

(based on April 2015 Decision Flow Chart)

LA District Commander recommends denial draft Section 404 permit

(b) (5) Deliberative

TBD

(b) (5) Deliberative

(b) (5)
Deliberative

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

From: [Jessop, Carter](#)
To: [Vogel, Mindy S -FS](#)
Subject: Rosemont Water Quality data
Date: Thursday, July 16, 2015 6:12:00 PM

Hello Mindy,

Please see below. Elizabeth Goldmann has been looking into the potential water quality impacts identified in the FEIS/SIR. The excerpt below is from page 135 of the SIR. Do you happen to know the source of this data? If it is a new technical report, could you possibly send us an electronic version?

Thank you for your assistance.

-Carter Jessop

Carter W. Jessop
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jessop.carter@epa.gov

From: Goldmann, Elizabeth
Sent: Thursday, July 16, 2015 2:45 PM
To: Jessop, Carter
Subject: RM

Hi Carter,

I cannot find any source for the "new information" regarding water quality in Davidson Canyon. It would be helpful to obtain it from USFS. Thanks, E.

Based on the new information received, there is now some record of runoff water quality in Davidson Canyon. Almost without exception, average concentrations in Davidson Canyon are less than those in Barrel Canyon. This is true for aluminum (total), antimony (total), arsenic (total), barium (total), beryllium (total), cadmium (total and dissolved), calcium (total), chloride (total), chromium (total and dissolved), copper (total and dissolved), fluoride (total), iron (total), lead (total and dissolved), magnesium (total), manganese (total), molybdenum (total), nickel (total and dissolved), nitrate, selenium (total), silver (total and dissolved), sodium (total), sulfate (total), thallium (total), and zinc (total and dissolved). Two constituents have higher average concentrations in Davidson Canyon than Barrel Canyon: total dissolved solids, and potassium (total). Several constituents are unable to be compared due to laboratory detection limits, including arsenic (dissolved), iron (dissolved), and mercury (total and dissolved). SIR p. 135.

From: [Jessop, Carter](#)
To: (b) (6)
Subject: Timeline for 8/14/15 interagency call - Rosemont
Date: Friday, August 14, 2015 12:05:00 PM

Hello Horst,

If you could please send me the timeline for today's call, I would appreciate that.

Thank you.

-Carter

Carter W. Jessop
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From: [Gayle Hartmann](#)
To: [Blumenfeld, Jared](#)
Subject: letter and science statements regarding proposed Rosemont Mine
Date: Monday, November 02, 2015 8:45:12 PM
Attachments: [SSSR package to ACE 10.28.15.pdf](#)

Mr. Blumenfeld,

A few days ago we sent the attached letter and science statements to Col. Gibbs with the Army Corps of Engineers in Los Angeles.

We would appreciate it if you and your staff would take a few minutes to read the attached material.

Thank you very much for your continued concern.

Gayle Hartmann, President

Save the Scenic Santa Ritas

Tucson, Arizona



SAVE THE SCENIC SANTA RITAS ASSOCIATION

8987 E. Tanque Verde #309-157, Tucson, AZ 85749 info@scenicsantaritas.org www.scenicsantaritas.org (b) (6)

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Bob Sharp

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Carol Tahse

October 28, 2015

Colonel Kirk E. Gibbs
915 Wilshire Blvd., Suite 1101
Los Angeles, CA 90017

RE: Proposed Rosemont Mine in the Santa Rita Mountains of Southeast
Arizona

Dear Colonel Gibbs:

As you are aware, an enormously controversial open-pit copper mining project, the Rosemont mine, is being proposed for siting in the Santa Rita mountains of southeast Arizona. This project would cause significant damage to the environment of the region as well as having serious negative impact on the economy of the region. The project would irreparably destroy about 3,500 acres of public land within the Coronado National Forest – land studded with magnificent oaks and hackberry, drained by several streams, and hosting numerous springs and seeps – land known for its great biodiversity as well as its significant Native American cultural resources.

Save the Scenic Santa Ritas is the non-profit organization spearheading opposition to the proposed mine. The project is opposed by many elected officials, organizations and individuals. Congressman Raul Grijalva strongly opposes it, as have Congressman Ron Barber and Congresswoman Gabrielle Giffords. It is vigorously opposed by Pima County, as well as Santa Cruz County, the City of Tucson, the towns of Patagonia and Sahuarita, the Green Valley Council, and the Tohono O'odham Nation. Numerous organizations, farmers, ranchers, small businesses, recreational and environmental groups totaling about 80,000 individuals also oppose the mine. At its heart, this view from many and diverse interests is grounded in the knowledge that this project at this place is simply not in the public interest.

We appreciate the Corps' attention to this issue. Your predecessor, Col. Colloton, visited the site and cast a critical eye on the then-proffered mitigation plan. We believe that despite new packaging, the current mitigation plan submitted similarly fails to achieve the level of mitigation necessary to meet the requirements of the Clean Water Act. We do not believe that this project can be sufficiently mitigated. We would like to reinforce that perspective with the information appended to this letter. Attached are summaries of current information about impacts on some of the most critical resources that would be affected by the mine. This is by no



SAVE THE SCENIC SANTA RITAS ASSOCIATION

8987 E. Tanque Verde #309-157, Tucson, AZ 85749 info@scenicsantaritas.org www.scenicsantaritas.org (520) 445-6615

means an exhaustive list of issues. We urge you to come to southern Arizona and visit the site. We would, of course, be pleased to meet with you either here in southern Arizona or at your offices. I can be reached at Tel. (b) (6).

I do hope to hear that you have received this letter as well as any thoughts you may have.

Sincerely,

Gayle Hartmann, President
Save the Scenic Santa Ritas

Attachments:

- Water quality
- Water quantity and quality
- Water quantity
- Air quality
- Endangered species (especially terrestrial)
- Endangered species (aquatic)



WOODS HOLE OCEANOGRAPHIC INSTITUTION

Stanley R. Hart
Department of Geology and Geophysics
Woods Hole, Ma 02543

Colonel Kirk Gibbs
Los Angeles Division
Army Corps of Engineers

October 6, 2015

Dear Colonel Gibbs:

I have standing to provide comments on the permits involving water issues for the Rosemont Copper Mine project. I live well within the areas of environmental concern and impact of the mine. I hold a Ph.D. in geochemistry, I was a full professor at M.I.T. for 15 years, and a Senior Scientist at the Woods Hole Oceanographic Institution for 20 years. I have published more than 240 peer-reviewed papers, and am a member of the National Academy of Sciences.

I would like to address particular attention to the likelihood that seepage from the mine tailings piles and its dust burden will contaminate both the regional aquifer and the water courses (WUS) downstream from the proposed mine.

* Laboratory Leaching Experiments. It is a ***required demonstration*** of the Arizona DEQ that the facility will not cause or contribute to an exceedance of Aquifer Water Quality Standards (AWQ). To meet this requirement, Rosemont undertook a series of leaching tests. Data from the most relevant test was incorrectly analyzed, as specified by the ASTM D5744-07 protocol that Rosemont utilized. Correct analysis shows large exceedances in seepage water quality, in violation of AWQ standards.

* AWQ Standards. Arizona still uses the old 0.05 ppm standard for Arsenic. Much of Rosemont's water quality modeling would fail if the 0.01 ppm standard set by EPA many years ago was used.

* Biological Leach-enhancement. All of Rosemont's leaching tests were strictly inorganic (abiotic). It is well known that the presence of organic acids and active biological processes can increase weathering and leaching rates of some toxic metals by huge factors (see papers in Geomicrobiology, Banfield and Nealson, editors, Reviews in Mineralogy 35, 1997). Therefore, the results from the leaching experiments discussed here should be viewed as lower limits, with the leaching rates under field conditions certainly higher. This will lead to further AWQ exceedances in the seepage model.

* Flow modeling. All of the modeling used a homogeneous permeability model. If a realistic heterogeneous permeability structure is used, AWQ standards would be exceeded for many elements.

* Tailings transport as dust. Dust transport by wind > 25 mph is not prohibited in AZ. Tailings material will thus be transported outside the compliance area. Leaching with meteoric water outside the designated facility will lead to contamination of the aquifer. This is a regulatory "donut hole".

Best regards,

A handwritten signature in black ink that reads "Stanley R. Hart". The signature is written in a cursive, slightly slanted style.

Stanley R. Hart

Tom Myers, Ph.D.
Hydrologic Consultant
6320 Walnut Creek Road
Reno, NV 89523

(b) (6)

Hydrogeologic Objections to the Proposed Rosemont Copper Project

- Groundwater pumping to dewater the mine pit would extend groundwater drawdown to the north east and south in and beyond the Santa Rita Mountains. This drawdown would affects springs and domestic wells for several miles from the mine. Streamflow in Davidson Canyon could be affected.
- The mine pit would fill with water once mining ceases. The massive volume of water used to fill the pit would create a long-term deficit in the local groundwater basin, and extend the effects of dewatering pumpage during mining for decades into the future.
- The massive pit lake that would form would evaporate water in perpetuity. An evaporating pit lake resembles a large diameter well, pumping at the rate of evaporation. This permanent loss of water will maintain a several hundred foot drawdown around the pit, affecting springs and nearby wells for a long-time into the future.
- The water in the pit lake would be essentially unusable forever. In addition to being difficult to access, using it would further perpetuate the drawdown by increasing the effective large diameter well pumping. The pit lake water quality would also make it difficult to use without significant treatment.
- Rainfall would seep through the waste rock stored forever near the pit and leach contaminants into shallow groundwater and streams.
- Pumping groundwater for process water would add to the current deficit in valleys west of the Santa Rita Mountains.



United States Department of the Interior
U. S. Geological Survey
520 N. Park Avenue, 247A
Tucson, AZ 85719

October 5, 2015

This message is provided to summarize possible effects to the ground-water resource east of the Santa Rita Mountains, southeast Arizona, if a deep pit at the Rosemont Mine site is excavated. Observations and conclusions of this summary were developed while conducting hydroecological research in the Sonoita Plain not directly related to the impacts of mining. I am a retired (Emeritus) Research Hydrologist, Water Resources Discipline, U. S. Geological Survey; my professional career has been in basic earth-science research with emphases on stream-channel processes, ground-water/surface-water interactions, and the interplay between vegetation and bottomland fluvial processes. My qualifications to give these comments are supported by peer-reviewed journal articles and related publications that document my research activities.

In conducting field research on the Sonoita Plain, it became apparent to me that:

- The construction of a deep open-pit mine at the Rosemont site will result in drainage of ground water from aquifers east and southeast of the mine into the pit.
- Ground-water levels beneath the Sonoita Plain will be lowered owing to movement of ground water into the pit, which will act similarly as a very deep, large-diameter well; it is only the magnitude and areal extent of the reduced water levels that are in question.
- Details of the above conclusions are given in a report (Statement of Concern – Ground-Water Resources of the Sonoita Plain) written for concerned citizens and organizations and published on-line by the Sonoran Institute¹. Elaboration was given in a Special Commentary, Clearing the air on Rosemont Mine's hydrology, printed by the Arizona Daily Star, November 20, 2013, page A17².
- Corroboration for the conclusions in the Statement of Concern was provided by an independent analysis by Larry Winter, PhD, Professor and Head, Department of Hydrology and Water Resources, University of Arizona, and by results of ground-water modeling by Tom Myers, Montgomery and Associates, and TetraTech.
- Because hydrogeologic conditions of the Sonoita Plain are complex, the severity of water-level declines due to ground-water movement to an open pit is not presently known. There can be no doubt, however, that declines will occur, locally surface flows will be reduced, and some water wells will no longer yield water. Accordingly, the hydrology of the area will be disrupted, ecosystems and ecosystem services of the Sonoita Plain will be compromised, and the regional economy will be adversely affected.

¹www.sonoraninstitute.org/component/docman/doc-details/1363-statement-of-concern-comments-on-draft-eis-and-water-issues-regarding-proposed-rosemont-mine-01172012.html

²www.highbeam.com/doc/1P2-35862646.htm

W. R. Osterkamp, PhD
Research Hydrologist, Emeritus
U. S. Geological Survey

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THE UNIVERSITY OF ARIZONA
COLLEGE OF SCIENCE

**Atmospheric
Sciences/IAP**

October 28, 2015

Colonel Kirk Gibbs
Los Angeles Division
Army Corps of Engineers

Dear Colonel Gibbs,

While working *pro bono* for Save the Scenic Santa Ritas, I evaluated the impacts of the proposed Rosemont mine on regional air quality. I am an atmospheric chemist who has studied air quality issues, particularly windblown dust in Arizona, for over two decades. I am Head of the Department of Atmospheric Sciences, and interim Head of the Department of Hydrology and Water Resources at the University of Arizona.

The following four points are a brief summary of the comments I prepared for: *Chapter 3. Air Quality and Climate Change*, in *Draft Environmental Impact Statement for the Proposed Rosemont Mine, Santa Rita Mountains, Arizona*.

1. **Tailings Storage Emissions.** Rosemont has grossly underestimated particulate matter emissions from the Tailings Storage pile. If the correct Tailings Storage emission factor were to be used in their AERMOD model projections, then the particulate matter levels would be much higher than already predicted, and most likely exceed National Ambient Air Quality Standards.
2. **AERMOD PM10.** Even overlooking the Tailings Storage error, Rosemont still underestimates PM10 emissions by ignoring its own observations. AERMOD PM10 predictions show that the National Ambient Air Quality Standards will be exceeded when added to the observed average background PM10, as required. Rosemont incorrectly omits some of their own PM10 observations in order to meet the NAAQS standard.
3. **Inappropriate Background Levels.** For the EIS, Rosemont is required to model future pollutant levels and then to add these estimates to the *existing* pollutant levels, i.e., on top of the current “background” levels found in the immediate area. Instead, Rosemont selects the lowest possible pollutant level it can find, sometimes in pristine areas hundreds of miles

away from the proposed mine site, and then adds this “background” level to predicted Rosemont emissions. This mistake is made for particulate matter and for NO_x, among other pollutants, and calls into question *all* the air quality model results. It is possible that elevated NO_x emissions will lead to Pima County exceeding the new EPA ozone standards which will impact the health of residents and will burden tax payers with the costs of meeting the new ozone standard.

4. **Model Resolution and Domain.** Rosemont’s air quality models do not appear to use sufficiently high spatial resolution to account for the effects of the complex terrain on air flow patterns. Nor do the boundary conditions for the model appear to have been set far enough upwind to account for the effects of topography.

In summary, the proposed Rosemont mine will have significant deleterious impacts on air quality in Pima County and also in Tucson, a city of one million people, under certain meteorological conditions.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Betterton". The signature is fluid and cursive, with a large initial "E" and a stylized "B".

Eric A. Betterton, Ph.D.



October 9, 2015

The Center for Biological Diversity is a national non-profit organization based in Tucson, AZ. The Center works through science, law and creative media to protect threatened and endangered species and their habitats. We represent more than 50,000 members, thousands of whom reside in Arizona, who are very concerned about the ongoing mass extinction crisis that is wiping out species at a rate that exponentially exceeds the normal background rate.

We have worked to protect the Santa Rita Mountains and its rich biodiversity for many years, which includes direct engagement with the Rosemont mine proposal throughout the project time frame to date. This proposal creates conflicts with at least a dozen different listed species, as well as others that await listing decisions.

Endangered Species Conflict Highlights

Jaguar—The only jaguar currently documented in the United States lives at the project site, within designated critical habitat for this species. This cat has been photographed in the immediate vicinity of the proposed mine more than 100 times in the past three years by a University of Arizona/U.S. Fish and Wildlife Service (USFWS) monitoring project. The photographic evidence shows that this jaguar has clearly established this area as its home range.

Not only does the proposed mine conflict with occupied jaguar critical habitat, it's located in an intersection of several major wildlife corridors that are critically important for U.S. jaguar recovery in general. The Rosemont area provides excellent connectivity to other Sky Island mountain ranges to the north and east, as well as to Mexico to the south, through an area where border infrastructure has not made it impossible for jaguars dispersing north from the nearest breeding population in Mexico to access U.S. habitat. Indeed, USFWS specifically included substantial acreage in its critical habitat designation to preserve these movement corridors.

Through the Freedom of Information Act, we've learned that four separate draft biological opinions by USFWS scientists on this project determined that it is not compatible with jaguar recovery or critical habitat; yet, inexplicably, an opinion was eventually issued exactly contrary to the analysis of the agency's own scientists. However, the opinion was subsequently withdrawn and the agency continues to analyze the project's impacts.

Ocelot—An ocelot has also been photographed at some of the same detection sites as the jaguar, making these locations the only places in the U.S. where all four large North American felines—bobcat, puma, ocelot, and jaguar—have been documented.

Aquatic species—As addressed in a separate attachment herein, Gila topminnow, Gila chub, Chiricahua leopard frog, Huachuca water umbel, and northern Mexican gartersnake all depend on the perennial waters and aquatic habitat provided by Cienega Creek. Several agencies and

studies have raised concerns about the potentially devastating impacts of aquifer drawdown caused by the mine and resulting loss of surface water in the Cienega Creek drainage, which would eliminate critically important habitat for these species, including designated critical habitat for the fish and frog. The Gila topminnow in particular could suffer jeopardy as a result of the Rosemont mine, as Cienega Creek harbors the keystone population of that species.

Riparian dependent species—Southwestern willow flycatcher and yellow-billed cuckoo are also found in the Cienega Creek watershed, which includes designated critical habitat for the flycatcher and proposed critical habitat for the cuckoo.



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[see separate attachment for references re: aquatic species]

September 29, 2015

The FROG Conservation Project is a partnership dedicated to recovering the native aquatic wildlife and habitat of Cienega Creek and biologically connected areas.

Project Goals:

- Create new leopard frog breeding populations in the upper watershed of Cienega Creek.
- Elimination of non-native aquatic species that threaten native plants and animals of Cienega Creek.
- Mitigate effects of emerging, exotic disease on native frog populations.
- Engage community in research and monitoring, and to support native species recovery.

Our biologists have been working intensively with the aquatic species of the Cienega Creek watershed for 2 decades. We have formed close relationships with both public and private partners who have spent millions of dollars protecting this uniquely native-dominated resource of threatened, valley bottom, riparian habitat, which occurs nowhere else in the U.S. Southwest. After reviewing the proposed impacts and mitigation for the proposed Rosemont mine, we have serious concerns for the future of the species that our partnership has worked hard to protect.

Mitigation concerns regarding aquatic species:

Loss of surface water resulting in converting Empire Gulch Spring and Cienega Creek from perennial systems to ephemeral systems:

None of the proposed mitigations will protect the existing surface water in the Cienega Creek watershed, which is designated as critical habitat. T&E species (Chiricahua leopard frog, northern Mexican gartersnake, Gila chub, Gila topminnow, desert pupfish, Huachuca water umbel) and other declining and imperiled species (lowland leopard frog, longfin dace, and many other plants and animals) will face extinction in the watershed without perennial waters.

Cienega Creek is the heart of the leopard frog meta-populations in this watershed and the key to recovering the Chiricahua leopard frog in RU2 of the U.S. Fish and Wildlife Service's Recovery Plan.

Empire Gulch Spring, which may be most immediately threatened by the mine, is currently the only known site where the Chiricahua leopard frog metapopulation has been able to resist the emerging global disease (*chytridiomycosis*) that has caused numerous amphibian species extinctions and threatens many more species.

The Cienega Creek population of Gila topminnow is the only large, clearly viable natural population of this endangered species in the United States. Declining flow in Cienega Creek has been shown to result in localized native fish extinction, a threat that will likely

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be increased - possibly dramatically - by mine effects on creek surface flow.

A host of species depend on recovery of the frogs and fishes for their own persistence, including the threatened northern Mexican gartersnake.

Mine operation waters are an attractive nuisance to Chiricahua leopard frogs:

Large numbers of federally protected frogs will be attracted to the mine operation waters where they may be subjected to unstable and unsafe conditions. Frog fencing is not a good option as frogs will desiccate at fences or be predated on. Ranid frogs have annual dispersal distances of at least 5 miles. Current and historic monitoring has found Chiricahua leopard frogs throughout the Rosemont region. In addition, mine waters may become an attractive nuisance for harmful non-native species that directly threaten native species, and may be difficult to control.

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cc David Hall, Phil Rosen

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